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Dated: January 26, 2011 Signature: /Thomas W. Humphrey/
(Thomas W. Humphrey)

Docket No.: ORM 156CO
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Eric Chapoulaud et al.

Application No.: 09/941,151 Confirmation No.: 4585

Filed: August 28, 2001 Art Unit: 3732

For: Custom Orthodontic Appliance Forming Method and Apparatus Examiner: H. M. Eide

REPLY BRIEF

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
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This paper is in reply to the Examiner's Answer mailed November 26, 2010 and specifically the following arguments stated in that Answer.

Chishti

In the Answer, page 6, line 5, the Examiner states that Chishti teaches the claimed step of "providing feedback", referencing col. 14, lines 16-20. The cited text explains that the Chishti software "allows for adding annotations to the datasets which can comprise text and/or the sequence number of the apparatus.

The annotation is added as recessed text (i.e. it is a 3-D geometry), so that it will appear on the printed positive model. ...."

Applicant respectfully submits that the Examiner has misunderstood Chishti, or the present claims. The Chishti "software" that "allows for adding annotations to the datasets" such as "text or the sequence number", is the same "software" that is used by a laboratory operator to formulate tooth post-treatment positions. As is elaborated in the immediately preceding text in col. 14, that software permits graphical manipulation to create a modified tooth position. Thus, the "software" that creates "annotations" is the software used by the same operator that graphically manipulates teeth to new positions. Furthermore, the "annotations" that are described in col. 14 relate to the manner of use of the appliances, i.e., they are "text or the sequence number of the apparatus ..." and "... may appear on the delivered repositioning appliances." Thus, the col. 14 text is not suggesting that the annotations indicate or could be used to give feedback to change the suggested post treatment positions; indeed, as the annotations appear on the appliances themselves, it would not make sense for the annotations to describe changing the post-treatment tooth positions -- those positions would have already been used to make delivered appliances.

Claim 120 presently at issue recites displaying computerized data of images of teeth in post treatment position "with interaction by an operator", and receipt of feedback on suggested post-treatment positions "from a person, other than the operator, who has interactively viewed a display of the provided images". Thus, in complete contrast to Chishti, the person providing the feedback in claim 120 is not the operator that interacts with the images to produce suggested post-treatment positions, but someone else.

Claim 124 and 129 presently at issue recite that an orthodontic practitioner provides "feedback information" which includes "information approving" (aka "approval") or "information changing" (aka "revision") of the suggested post treatment positions, and that the custom appliance is provided "in accordance with the feedback information." This is in direct contrast with Chishti where the 'annotations' have nothing to do with approval or revision of the post-treatment positions -- as those have already been determined and used in fabricating the appliance bearing the annotations. Furthermore, in Chishti, the appliance is not made in accordance with feedback, but rather, it is annotated to instruct its use.

The Examiner's responses also rest on the unsupported assertion at page 7 that "Chishti, teaches several different method of obtaining the final positions of

the teeth including the treating professional individually moving the teeth." As explored above, Chishti does not teach a treating professional moving teeth or doing any other sort of feedback on suggested final positions. There is no basis for the Examiner's assertion on this point.

Lehmann

As to Lehmann, the Examiner acknowledges in the reply (page 4) that "Lehman et al. is used to teach a situation in which the person, treating professional, or orthodontic practitioner (dentist) does not have access to the computerized site and uses the services of another such as that of the operator, user, or laboratory, and interactivity is present in the method of providing a custom dental appliance" (emphasis added). Applicant cannot understand how this teaching from Lehman would in any way supply what is clearly missing from Chishti. A practitioner that does not have access to the computerized site could not "interactively view[] a display of the provided images [of suggested post-treatment positions]" and provide feedback per claim 120, nor could such a person provide feedback to change or approve graphically displayed suggested tooth positions per claim 124– indeed, this would be impossible as the practitioner "does not have access" to the computerized site. Hence, the "interactivity" that the Examiner is

asserting found in Lehmann could only be non-computerized interactivity, and fail to meet the claim language.

Hultgren and Peltz

The Examiner's remarks regarding Hultgren and Peltz do not explain how either reference would lead to a modification of Chishti's method. As previously noted by Applicant, Hultgren teaches scanning a tooth cast and transmitting it remotely. This might lead one to electronically submit the original positions of teeth to Chishti's system, rather than mailing a so-called stone model of that position, but it would not alter the essence of the Chishti method. The Examiner's argument that "it would have been obvious to one having ordinary skill in the art [t]o transmit the treatment plan taught by Chishti to another user to get a second opinion of a consulting dentist" assumes that Chishti enables, or provides a function, in which someone other than the software operator can view or interact with a treatment plan generated by that operator, and assumes that a second opinion would be sought. Chishti does not provide or suggest either; indeed, Chishti indicates that the plan generated by the operator is used to fabricate appliances, and only the appliances are returned to a practitioner.

As to the videoconferencing system in Peltz, Applicant cannot see how its application to Chishti would do any more than allow an orthodontic practitioner to examine patients remotely, which could not change the basic method of Chishti in any way. The Examiner observes that Peltz references a "dental exam camera" (among numerous other types of cameras or imaging equipment), but that reference is not specific to orthodontics or the creation of dental appliances by a dental office– it merely indicates that Peltz contemplates that a practitioner could examine a patient's teeth remotely. This does not suggest or even relate to the communications between a treating practitioner and laboratory technicians – the issue presently at hand. Peltz makes no suggestions on how communications ought to be made in this context, and would not lead to a modification of Chishti into the claimed invention.

Declarations

Regarding the Declarations submitted by Applicant, and particularly Exhibits U and V, the Examiner states "there is no evidence to show that the two images are related such that one image i[s] the original image which is the images of the teeth in the post treatment positions and the second image has been interactively viewed and provided with feedback. Specifically, there is no

evidence to show interactive feedback as required by each of the independent claims."

These remarks ignoring the declarations to which exhibits V and U are attached, which clearly provide the evidence that the Examiner seeks. Specifically, Mr. Jordan's declaration is *evidence* that he personally witnessed interactive feedback. This is quoted at length from the Declaration, in Applicant's brief at page 10. Additionally, there is *evidence* from inventors Andreiko and Chapoulaud on the same topic is similarly quoted at length, in Applicant's brief at page 11. Inventor Chapoulaud explains particularly how Exhibits U and V were created, through an interactive feedback process between himself and Dr. Andreiko. The claim chart at page 17 et seq. of Mr. Chapoulaud's declaration details how the process documented by Exhibits U and V involved the creation of landmarks and post-treatment positions, and feedback in the form of modification of those that created different post-treatment positions.

These declarations and explanations by the inventors and a third party witness are *evidence*, and must be considered by the Examiner. They explain Exhibits U and V, while Exhibits U and V provide a date reference for those events, and corroboration. The Examiner's remarks simply ignore the evidence presented, which is clearly improper.

Conclusion

Accordingly, Applicant re-submits that the present claims distinguish the prior art. It is respectfully submitted the rejections should be withdrawn and the case allowed.

Applicant is resubmitting the appendix of claims in view of the Examiner's indication that the prior appendix should be corrected.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 23-3000, under Order No. ORM 156CO from which the undersigned is authorized to draw.

Dated: January 26, 2011 Respectfully submitted,

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APPENDIX – CLAIMS

Claims Involved in the Appeal of Application Serial No. 09/941,151

1-119. (CANCELED)

120. (PREVIOUSLY PRESENTED) A method of providing a custom orthodontic appliance for repositioning teeth of a patient, the method comprising:

providing for display on a computer screen, with interaction by an operator, data of images of the teeth of the patient in suggested post-treatment tooth positions and orientations that are based on three-dimensional information of the shapes of the teeth of the patient;

receiving feedback information on the suggested post-treatment positions and orientations from a person, other than the operator, who has interactively viewed a display of the provided images on the computer screen; and

providing a custom orthodontic appliance configured to reposition teeth of the patient based on the suggested tooth positions and orientations in accordance with the feed back information.

121. (PREVIOUSLY PRESENTED) The method of claim 120 wherein:

the person viewing the display of the images is an orthodontic practitioner; and

the feedback information includes information of approval by the orthodontic practitioner of the suggested post-treatment tooth positions and orientations toward which the teeth of the patient are to be moved by the appliance.

122. (PREVIOUSLY PRESENTED) The method of claim 120 wherein:

the feedback information includes information of a change in position or orientation of at least one tooth from the suggested post-treatment tooth positions and orientations toward which the at least one tooth of the patient is to be moved by the appliance.

123. (PREVIOUSLY PRESENTED) The method of claim 122 further comprising:

providing revised images of the teeth of the patient for redisplay in revised post-treatment tooth positions and orientations based on the suggested tooth positions and orientations as changed in accordance with the feedback information.

124. (PREVIOUSLY PRESENTED) A method of providing a custom orthodontic appliance configured to the individual anatomy of a patient for repositioning teeth of the patient, the method comprising:

providing for display on a computer screen images of the teeth of the patient in suggested post-treatment tooth positions and orientations that are based on three-dimensional information of the shapes of the teeth of the patient;

receiving feedback information on the suggested post-treatment positions and orientations from a person who has interactively viewed a display of the provided images on a computer screen wherein the feedback information includes one or more of:

information approving at least some of the suggested post-treatment positions and orientations , and

information changing at least one of the suggested post-treatment tooth positions or orientations; and

providing a custom orthodontic appliance configured to reposition teeth of the patient based on the suggested post-treatment tooth positions and orientations in accordance with the feedback information.

125. (PREVIOUSLY PRESENTED) The method of claim 124 further comprising:

providing revised images of the teeth of the patient in revised post-treatment tooth positions and orientations based on the suggested post-treatment tooth positions and orientations as changed in accordance with the feedback information.

126. (PREVIOUSLY PRESENTED) The method of claim 125 further comprising:

receiving from a person who has viewed a display of the provided revised images feedback information approving the revised post-treatment tooth positions and orientations toward which the teeth of the patient are to be moved by the appliance.

127. (PREVIOUSLY PRESENTED) The method of claim 124 further comprising:

providing the person viewing the display with a capability to enter the feedback information.

128. (PREVIOUSLY PRESENTED) The method of claim 124 wherein: the person viewing the display of the images is an orthodontic practitioner.

129. (PREVIOUSLY PRESENTED) A method of providing a custom orthodontic appliance, configured to the individual anatomy of a patient, for orthodontically repositioning teeth of the patient, the method comprising:

providing digital data of suggested post-treatment tooth positions and orientations of teeth of the patient that are based on three-dimensional information of the shapes of the teeth of the patient;

providing images of teeth of the patient from the digital data, for display on at least one computer screen to an orthodontic practitioner in the suggested post treatment tooth positions and orientations for either (a approval for use in creating a custom orthodontic appliance for the patient or (b revision;

receiving from an orthodontic practitioner, who has interactively viewed on a computer screen a display of the provided images, feedback information approving the suggested post-treatment positions and orientations; and

providing a custom orthodontic appliance configured to the individual anatomy of the patient to reposition teeth of the patient based on the suggested

post-treatment tooth positions and orientations approved in accordance with the feedback information.

130. (PREVIOUSLY PRESENTED) The method of claim 129 wherein the receiving of the feedback information approving the suggested post-treatment positions and orientations for a custom orthodontic appliance for the patient includes:

receiving from an the orthodontic practitioner, who has interactively viewed on a computer screen a display of the provided images, feedback information of revisions to the suggested post-treatment positions and orientations;

providing further images of teeth of the patient based on the three dimensional information, for redisplay on the computer display device to the orthodontic practitioner, in suggested post-treatment tooth positions and orientations that have been changed in accordance with the feedback information of the revisions; and

receiving from the orthodontic practitioner, who has viewed a redisplay of the provided further images on a computer screen, the feedback information approving the suggested post-treatment positions and orientations, as changed in accordance with the feedback information of the revisions.

131. (PREVIOUSLY PRESENTED) The method of claim 130 wherein: the providing of digital data of suggested post-treatment tooth positions and orientations of teeth of the patient that are based on three-dimensional information of the shapes of the teeth of the patient includes providing for display on a computer screen, with interaction by an operator, the digital data; and

the orthodontic practitioner who has interactively viewed on a computer screen a display of the provided images is a person other than the operator.

132. (PREVIOUSLY PRESENTED) The method of claim 130 wherein:

the receiving of feedback information from an orthodontic practitioner approving the suggested post-treatment positions and orientations includes receiving feedback information wherein the feedback information can include either information approving the suggested post-treatment tooth positions and orientations or information modifying at least one of the suggested post-treatment tooth positions or orientations.